A	AMPERE
AC	ALTERNATING CURRENT
AFF	ABOVE FINISHED FLOOR
AFG	ABOVE FINISHED GRADE
AHU	AIR HANDLING UNIT
AIC	AMPERES INTERRUPTING CAPACITY
ATS	AUTOMATIC TRANSFER SWITCH
AWG	AMERICAN WIRE GAUGE
BAS	BUILDING AUTOMATION SYSTEM
BKBD	BACKBOARD
C	CONDUIT
CAT	CATALOG, CATEGORY
CATV	CABLE TV
CB	CIRCUIT BREAKER
CCTV	CLOSED CIRCUIT TELEVISION
CM	CIRCULAR MILS
COMM	COMMUNICATIONS
CU	MECH CONDENSING UNIT
CU	COPPER
CUH	CABINET UNIT HEATER
DC	DIRECT CURRENT
DDC	DIGITAL DIRECT CONTROL
DN	DOWN
DW	DISHWASHER
DWG	DRAWING
EF	EXHAUST FAN
ELEV	ELEVATOR
EMT	ELECTRICAL METALLIC TUBING
EP	EXPLOSION PROOF
ERU	ENERGY RECOVERY UNIT
EWC	ELECTRIC WATER COOLER
FACP	FIRE ALARM CONTROL PANEL
FB	FLOOR BOX
FLA	FULL LOAD AMPS
FWE	FURNISHED WITH EQUIPMENT
G, GND	GROUND
GFCI	GROUND FAULT CIRCUIT INTERRUPTER
GFP	GROUND FAULT PROTECTION
HID	HIGH INTENSITY DISCHARGE
HOA	HAND-OFF-AUTO SELECTOR SWITCH
HP	HORSEPOWER
HVAC	HEATING, VENTILATION AND COOLING UNIT
IDS	INTRUSION DETECTION SYSTEM
IG	ISOLATED GROUND
IMC	INTERMEDIATE METAL CONDUIT
IR	INFRARED
K	KILO
KCMIL	KILO CIRCULAR MILS
KW	KILOWATT
KVA	KILO VOLT-AMPS
LAN	LOCAL AREA NETWORK
LC	LIGHTING CONTACTOR
LF	LINEAR FEET
LC	LOADCENTER
LCP	LIGHTING CONTROL PANEL
LED	LIGHT EMITTING DIODE
LTG	LIGHTING
LTS	LIGHTS
MAX	MAXIMUM
MCB	MAIN CIRCUIT BREAKER
MECH	MECHANICAL
MH	MOUNTING HEIGHT
MC	MICROPHONE
MW	MICROWAVE
MLO	MAIN LUG ONLY
MT	MOUNT
MTS	MANUAL TRANSFER SWITCH
MCP	MOTOR CONTROL PANEL
MH	METAL HALIDE
MDP	MAIN DISTRIBUTION PANEL
MIN	MINIMUM
N	NEUTRAL
NC	NORMALLY CLOSED
NEC	NATIONAL ELECTRICAL CODE
NEMA	NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
NFPA	NATIONAL FIRE PROTECTION ASSOCIATION
NIC	NOT IN CONTRACT
NF	NON-FUSED
NO	NORMALLY OPEN
NO., #	NUMBER
NTS	NOT TO SCALE
OC	ON CENTER
OCC	OCCUPANCY
OH	OVERHEAD
P	POLE
PA	PUBLIC ADDRESS
PB	PULLBOX
PH,	PHASE
PIR	PASSIVE INFRARED
PNL	PANELBOARD
P/O	PART OF
PV	PHOTOVOLTAIC
PVC	POLY-VINYL CHLORIDE
REC RECEPT	RECEPTACLE
REF	REFRIGERATOR
RF	RETURN FAN
RGS	RIGID GALVANIZED STEEL
RM	ROOM
RMC	RIGID METAL CONDUIT
RTU	ROOFTOP UNIT
REF	REFRIGERATOR
SF	SUPPLY FAN
ST	SHUNT TRIP
SPDT	SINGLE POLE, DOUBLE THROW
SQ	SQUARE
TEL	TELEPHONE
TVSS	TRANSIENT VOLTAGE SURGE SUPPRESSOR
TYP	TYPICAL
UF	UNDER FLOOR
UG	UNDERGROUND
UH	UNIT HEATER
UL	UNDERWRITER'S LABORATORY
UNO	UNLESS NOTED OTHERWISE
UPS	UNINTERRUPTIBLE POWER SUPPLY
V	VOLTS
VFD	VARIABLE FREQUENCY DRIVE
W	WATT
WP	WEATHERPROOF
WG	WIREGUARD
XFMR	TRANSFORMER
(E)	EXISTING ITEM TO REMAIN
(R)	REMOVE ITEM AND DISPOSE OF PROPERLY
(ER)	RELOCATED ITEM AT NEW LOCATION
(RL)	REMOVE AND RELOCATE

A1 ABBREVIATIONS

PROJECT NOTES

1. THE SCOPE OF WORK SHALL INCLUDE PROVIDING ALL WORK INDICATED UNLESS OTHERWISE SPECIFICALLY INDICATED AS EXISTING OR WORK BY OTHERS, AND COORDINATION WITH ALL TRADES SCOPE OF WORK AS INDICATED ON THE CONTRACT DOCUMENTS INCLUDING BOTH THE DRAWINGS AND THE SPECIFICATIONS, WHICH ARE COMPLIMENTARY. WORK REQUIREMENTS INDICATED IN ANY CONTRACT DOCUMENT SHALL BE CONSIDERED PART OF THE SCOPE OF WORK, UNLESS SPECIFICALLY INDICATED AS EXISTING OR WORK BY OTHERS.
2. IN GENERAL, WORK REQUIREMENTS ARE NOT INDICATED IN BOTH DOCUMENTS. WHERE DOCUMENTS CONFLICT WITHIN THEMSELVES OR WITH CODES AND REGULATIONS. PROVIDE THE HIGHER QUANTITY AND QUALITY AND FOLLOW THE STRICTER REQUIREMENTS.
3. WORK AT A MINIMUM SHALL BE IN ACCORDANCE WITH OSHA, NFPA STANDARDS, THE ELECTRICAL CODE AND THE LOCAL GOVERNING AUTHORITIES. THE DRAWINGS AND SPECIFICATIONS DO NOT ATTEMPT TO INDICATE ALL WORK REQUIRED BY CODE AND AUTHORITIES. DO NOT INSTALL WORK THAT DOES NOT MEET THE MINIMUM REQUIREMENTS. IF NECESSARY, REQUEST CLARIFICATION FROM ARCHITECT AND ENGINEER BEFORE PROCEEDING.
4. ALL EQUIPMENT SHALL BE INSTALLED IN A NEAT AND PROFESSIONAL MANNER. RECTILINEAR TO BUILDING STRUCTURE.
5. ALL COMPONENTS SHOWN ON THE RISER DIAGRAMS OR DETAILS, BUT NOT ON THE PLAN OR VICE VERSA SHALL BE INCLUDED AS IF SHOWN ON BOTH.
6. IT IS THE INTENT OF THESE PLANS AND SPECIFICATIONS TO PROVIDE A WORKING INSTALLATION IN EVERY DETAIL AND ALL ITEMS REQUIRED FOR SUCH AN INSTALLATION SHALL BE PROVIDED WHETHER OR NOT SPECIFICALLY INDICATED OR MENTIONED.
7. VISIT THE SITE TO DETERMINE PRE-EXISTING CONDITIONS AND WORK NECESSARY PRIOR TO SUBMISSION OF BID PRICE. SUBMIT ANY QUESTIONS REQUIRED TO CLARIFY SCOPE PRIOR TO BID. INCLUDE ALL REQUIRED WORK IN BID PRICE.
8. INCLUDE IN BID WHATEVER IS REQUIRED TO MEET SCHEDULE INCLUDING OVERTIME, EXPRESS SHIPPING, EXPEDITING EQUIPMENT, ETC. PLAN FOR PROJECT AND SUBMIT SHOP DRAWING AND ORDER EQUIPMENT IN A TIMELY MANNER; EQUIPMENT SHALL BE BASED ON THE SPECIFIED EQUIPMENT.
9. ANY EQUIPMENT TO BE SUBSTITUTED SHALL BE IDENTIFIED AT THE TIME OF BID. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS FOR SUBSTITUTIONS.
10. ALL ELECTRICAL DEVICES, WHEN INSTALLED, SHALL BE PROTECTED FROM DAMAGE DURING CONSTRUCTION. COVER PLATES SHALL BE INSTALLED AFTER FINISH MATERIALS HAVE BEEN APPLIED.
11. TEST ALL EQUIPMENT AND SYSTEMS INSTALLED TO CERTIFY COMPLIANCE WITH DRAWINGS, SPECIFICATIONS, CODES, LOCAL AUTHORITIES AND REGULATIONS, INCLUDE LABOR AND COSTS FOR TESTING, REVIEWS, COMMISSIONING, APPROVALS AND CERTIFICATIONS.
12. PROVIDE TRAINING TO OWNER ON ALL EQUIPMENT AND SYSTEMS INSTALLED.
13. TEMPORARY LIGHTING AND POWER SHALL BE PROVIDED AS REQUIRED BY OSHA, CODES AND LOCAL AUTHORITIES. REMOVE ALL TEMPORARY FACILITIES PROVIDED AT PROJECT COMPLETION.

INSTALLATION COORDINATION NOTES

1. PRIOR TO ROUGH-IN OF ELECTRICAL PROVISIONS FOR OWNER FURNISHED EQUIPMENT AND EQUIPMENT PROVIDED BY OTHER TRADES, COORDINATE WITH THE GENERAL CONTRACTOR, EQUIPMENT SHOP DRAWINGS AND APPLICABLE EQUIPMENT INSTALLER FOR EXACT LOCATION AND WIRING REQUIREMENTS. PROVIDE ALL NECESSARY EQUIPMENT, WIRING AND ACCESSORIES FOR A COMPLETE INSTALLATION. MAKE ALL FINAL CONNECTIONS AS REQUIRED, I.E. POWER, CONTROL, INTERLOCK, ETC.
2. DISCONNECT, REMOVE, RELOCATE, AND RECONNECT ELECTRICAL CONDUIT, WIRING, DEVICES, BOXES, FIXTURES, EQUIPMENT, ETC. AS INDICATED AND AS REQUIRED TO FACILITATE THE WORK OF DIVISION 26 AND OTHER DIVISIONS. THESE DRAWINGS ARE NOT INTENDED TO INDICATE ALL ITEMS TO BE REMOVED.
3. THE LOCATION OF EQUIPMENT, OUTLETS, ETC. AS GIVEN ON THE DRAWINGS IS APPROXIMATE. IT SHALL BE UNDERSTOOD THAT THESE LOCATIONS ARE SUBJECT TO MODIFICATION AS MAY BE FOUND NECESSARY OR DESIRABLE AT THE TIME OF INSTALLATION IN ORDER TO MEET PROJECT REQUIREMENTS. SUCH CHANGES SHALL BE MADE WITHOUT EXTRA CHARGE.
4. IF EXACT LOCATION, MOUNTING OR RACEWAY ROUTING ARE NOT INDICATED OR ARE NOT CLEAR OR CONFLICT (LOCATION OR HEIGHT) COORDINATE WITH OTHER TRADES AND REQUEST CLARIFICATION PRIOR TO ROUGH-IN OR INSTALLATION. DRAWINGS ARE DIAGRAMMATIC ONLY. EXACT LOCATION, MOUNTING HEIGHTS OR EQUIPMENT AND ROUTING OF RACEWAYS SHALL BE COORDINATED WITH THE EQUIPMENT REQUIREMENTS AND FIELD CONDITIONS.
5. UNLESS OTHERWISE DIRECTED, PROVIDE ALL NEW POWER DISTRIBUTION EQUIPMENT WITH AIC RATINGS THAT MATCH OR EXCEED THE AIC RATING OF THE NEXT ACTIVE EXISTING UPSTREAM OVER-CURRENT PROTECTIVE DEVICE SERVING THE PANEL WHEN SERVED DIRECTLY BY ITS SOURCE (E.G. NO TRANSFORMER) OR PROVIDE AIC RATING THAT EXCEEDS BY 10% THE MAXIMUM LET THROUGH FAULT CURRENT (UNDER INFINITE PRIMARY BUSS) OF THE NEXT ACTIVE UPSTREAM TRANSFORMER (EXISTING OR NEW) SERVING THE RESPECTIVE PANEL.
6. SUBMIT SHORT CIRCUIT STUDY WITH POWER DISTRIBUTION EQUIPMENT SUBMITTALS FOR REVIEW AND APPROVAL. IN THE STUDY DEMONSTRATE THAT THE AIC RATING SELECTIONS ARE PROPERLY INTEGRATED AND COORDINATED WITH THE EXISTING AND NEW POWER DISTRIBUTION EQUIPMENT. CONFIRM THAT THE AIC RATING SELECTIONS HAVE INCORPORATED THE AVAILABLE FAULT DUTY VALUES OBTAINED FROM THE UTILITY COMPANY FOR THE PROJECTS ELECTRICAL SERVICE POINT OF COMMON COUPLING.
7. SUBMIT OVER-CURRENT PROTECTIVE DEVICE COORDINATION STUDY, FOR ALL NEW POWER DISTRIBUTION EQUIPMENT, WITH THE POWER DISTRIBUTION EQUIPMENT SUBMITTALS FOR REVIEW AND APPROVAL. INCLUDE THE NEXT ACTIVE EXISTING UPSTREAM AND DOWN STREAM OVER-CURRENT PROTECTIVE DEVICES, IN THE STUDY ANALYSIS, WHEN PROJECT IS WITHIN AN EXISTING FACILITY.
8. SUBMIT ARC FLASH REPORT, FOR ALL NEW POWER DISTRIBUTION EQUIPMENT, WITH POWER DISTRIBUTION EQUIPMENT SUBMITTALS FOR REVIEW AND APPROVAL. PROVIDE ARC FLASH LABELS BASED ON REPORT RESULTS FOR ALL NEW EQUIPMENT.

B3 ELECTRICAL GENERAL NOTES

WIRING NOTES

1. UNLESS OTHERWISE INDICATED ON PLANS OR IN SPECIFICATIONS; ALL CONDUCTORS, POWER DISTRIBUTION EQUIPMENT BUSSING AND TRANSFORMER WINDINGS SHALL BE FABRICATED OF 98% CONDUCTIVE COPPER MATERIAL.
2. WIRING IS INDICATED ON DRAWINGS ONLY FOR SPECIFIC ROUTES OR SPECIAL CONDITIONS.
3. RACEWAYS SHALL BE LIMITED TO SIX CURRENT CARRYING CONDUCTORS (PHASE AND NEUTRALS) AND GROUNDING CONDUCTOR. PROVIDE A DEDICATED NEUTRAL CONDUCTOR FOR EACH SINGLE-PHASE RECEPTACLE OR LIGHTING CIRCUIT, UNLESS OTHERWISE INDICATED OR IF AN OVERSIZED NEUTRAL IS SPECIFIED. CIRCUITS WITH SHARED NEUTRALS SHALL BE PROVIDED WITH CIRCUIT BREAKERS THAT HAVE A COMMON TRIP (E.G. FURNITURE WHIPS)
4. MARK ALL CONDUITS AND JUNCTION BOXES WITH PERMANENT MARKER INDICATING PANEL AND CIRCUIT NUMBER OF CONDUCTORS CONTAINED WITHIN. LABEL WHERE CONDUITS ENTER PANELS, WIRE WAYS, PULL BOXES, ETC. LABEL EMPTY CONDUITS WITH SYSTEM (VOICE, DATA, SECURITY, ETC.) AND SOURCE OF CONDUIT.
5. ELECTRICAL WORK NOT SERVING STAIRWELLS SHALL NOT PASS THROUGH A STAIR ENCLOSURE UNLESS AN APPROVED RATED SOFFIT IS PROVIDED TO MAINTAIN FIRE AND SMOKE RATING.
6. ALL RACEWAYS CROSSING EXPANSION JOINTS SHALL BE EQUIPPED WITH EXPANSION FITTINGS.
7. PROVIDE WATERTIGHT AND GAS TIGHT SEALS INSIDE AND OUTSIDE OF CONDUITS THAT PENETRATE THE BUILDING BELOW GRADE. O.Z. GEDNEY OR APPROVED EQUAL. PROVIDE WEATHER TIGHT SEAL AT PENETRATIONS ABOVE GRADE.
8. PROVIDE NRTL LISTED SMOKE AND FIRE SEALS AT ALL PENETRATIONS THROUGH FLOORS OR FULL HEIGHT (FLOOR TO FLOOR) WALLS.

REMOVAL NOTES

1. REFER TO FLOOR PLANS FOR SCOPE OF WORK AREA. REFER TO ARCHITECTURAL AND MECHANICAL DRAWINGS FOR ADDITIONAL INFORMATION ABOUT ELECTRICAL DEMOLITION SCOPE OF WORK AS RELATED TO THEIR RESPECTIVE SYSTEMS.
2. DASHED LINES REPRESENT WALLS SCHEDULED FOR REMOVAL; SOLID LINES REPRESENT WALLS REMAINING OR NEW WALLS.
3. REFER TO LEGEND FOR DEFINITION OF (E), (R), (ER) AND (RL) TAGS.
4. REFER TO NEW CONDITIONS PLANS FOR PROPOSED LOCATIONS OF ANY DEVICES/EQUIPMENT SCHEDULE FOR RELOCATION. PROVIDE REQUIRED SUPPORT COMPONENTS FOR INSTALLATION AT NEW LOCATION. EXTEND CONDUIT AND WIRE FROM EXISTING SOURCE OR LAST MAINTAINED ACTIVE DEVICE TO THE NEW LOCATION AND RE-TERMINATE TO DEVICE/EQUIPMENT.
5. DISCONNECT AND REMOVE ALL ELECTRICAL DEVICES/EQUIPMENT LOCATED ON WALLS SCHEDULED FOR REMOVAL (E.G. LIGHTING, RECEPTACLES, CONTROL DEVICES, SWITCHES, POWER DISTRIBUTION EQUIPMENT, FIRE ALARM DEVICES, COMMUNICATION AND DATA DEVICES, ETC.) UNLESS OTHERWISE SPECIFICALLY NOTED ON THE PLANS.
6. DISCONNECT AND REMOVE ALL WIRING FOR EQUIPMENT, SCHEDULED TO BE REMOVED, BACK TO THE POINT OF CONNECTION OR THE NEXT ACTIVE DEVICE SCHEDULED TO REMAIN. NOTHING SHALL BE ABANDONED IN PLACE.
7. VERIFY ALL EXISTING SOURCES OF POWER TO DEVICES/EQUIPMENT PRIOR TO FINAL REMOVAL.
8. COORDINATE ALL SHUTDOWN PROCEDURES WITH THE OWNER PRIOR TO DISCONNECTING ANY CIRCUITS.
9. ALL DEVICES/EQUIPMENT LOCATED ON WALLS SCHEDULED TO REMAIN SHALL BE MAINTAINED; RECIRCUIT THESE DEVICES/EQUIPMENT AS NECESSARY.
10. WHERE ANY WALL OR SYSTEM COMPONENT REMOVALS IMPACT WIRING TO EXISTING DEVICES/EQUIPMENT SCHEDULED TO REMAIN, PROVIDE WIRING AND CONNECTIONS AS REQUIRED TO RE-FEED THESE DEVICES/EQUIPMENT.
11. PROVIDE BLANK COVER PLATES FOR REMOVED POWER AND COMMUNICATIONS OUTLETS IN EXISTING WALLS THAT ARE SCHEDULED TO REMAIN.
12. THE WORK INCLUDES DISPOSAL OF ALL REMOVED ELECTRICAL DEVICES/EQUIPMENT/CONDUIT/WIRING/BOXES INCLUDING BALLASTS, DRIVERS, LAMPS, THERMOSTATS, ETC. LEGALLY DISPOSE OF ALL HAZARDOUS MATERIALS. COORDINATE WITH THE OWNER TO RECEIVE DIRECTION FOR ANY REMOVED DEVICES/EQUIPMENT THAT THE OWNER WOULD LIKE TO RETAIN; CAREFULLY DISCONNECT AND REMOVED THEM THEN RELOCATE THEM TO A LOCATION ON SITE DESIGNATED BY THE OWNER.
13. THE ELECTRICAL DEMOLITION FLOOR PLANS REPRESENT THE GENERAL SCOPE AND ARE NOT INTENDED TO SHOW ALL EXISTING EQUIPMENT, WIRING, CONDUITS, BOXES, DEVICES, OR FIXTURES. SURVEY THE WORK AREA AND VERIFY/IDENTIFY IN FIELD ALL DEVICES/EQUIPMENT AND RELATED COMPONENTS PLANNED FOR REMOVAL. COORDINATE WITH OWNER, ARCHITECT OR ENGINEER FOR DEMOLITION SCOPE CLARIFICATION AS NEEDED PRIOR TO REMOVING ITEMS IN QUESTION.
14. COORDINATE, IN FIELD, WITH OTHER TRADES AND THEIR SYSTEM COMPONENTS SCHEDULED FOR REMOVAL TO ENSURE ANY RELATED POWER HAS BEEN PROPERLY DISCONNECTED, REMOVED AND MADE SAFE PRIOR TO THEIR RELATED DEMOLITION SCOPE.
15. LIGHTING REMOVALS INCLUDE, BUT ARE NOT LIMITED TO INTERIOR LINEAR FIXTURES AND EXTERIOR WALL MOUNTED FIXTURES AS WELL AS THEIR RELATED CONTROL DEVICES AND WIRING.
16. PROVIDE UPDATED PANEL DIRECTORIES INDICATING NEW LOADS AND SPARES FOR LOADS THAT HAVE BEEN REMOVED. TURN TO THE OFF POSITION ANY CIRCUIT BREAKERS THAT ARE NOT CONNECTED TO A LOAD. PROVIDE PLUGS IN EXISTING PANEL ENCLOSURES WHERE OPENINGS HAVE BEEN LEFT DUE TO REMOVED CONDUITS OR WRING AND PROVIDE BLANKING PLATES IN PANELS WHERE BREAKERS HAVE BEEN REMOVED OR DO NOT EXIST.

B8 REMOVAL NOTES

- OVERHEAD WIRING, TYPE AS INDICATED
- UNDERGROUND OR UNDERSLAB WIRING, TYPE AS INDICATED
- UTILITY POLE
- FUSED DISCONNECT SWITCH
- NON-FUSED DISCONNECT SWITCH
- MOTOR
- GROUNDING SYSTEM
- JUNCTION BOX, WALL MOUNTED
- J — JUNCTION BOX, IN-GROUND
- M — ELECTRICAL MANHOLE, COORDINATE LOCATION WITH OTHER UNDERGROUND UTILITIES
- T — PADMOUNT TRANSFORMER
- PB — 4'X6' PULL BOX WITH 32" COVER PLATE IN ACCORDANCE WITH UTILITY STANDARDS
- P — PEDESTAL LOCATION, PEDESTAL BY SERVICE PROVIDER, STUB UP (2) 2" CONDUITS WITH CONNECTORS AND BUSHINGS FROM HANDHOLE
- H — HANDHOLE, SIZES INDICATED ON PLAN, MINIMUM SIZE PER NEC FOR NUMBER OF CONDUITS INSTALLED
- M — METER & CT CABINET, PEDESTAL MOUNTED
- SINGLE POLE MOUNTED LIGHT FIXTURE
- MULTIPLE LIGHT FIXTURES MOUNTED TO A SINGLE POLE-FIXTURE TYPES AS INDICATED
- WALL MOUNTED LIGHT FIXTURE
- BL — EMERGENCY BLUE LIGHT CALL BOX STATION
- EVSE — ELECTRIC VEHICLE DUAL CHARGING STATION POST
- BOLLARD OR GROUND-MOUNTED LIGHT
- SINGLE POLE HOMERUN: (2)#12+(1)#12G UNO, CONNECT TO PANEL INDICATED
- SINGLE-PHASE HOMERUN OR MULTIPLE HOMERUN UTILIZING THE SAME CONDUIT, CONNECT TO PANEL INDICATED
- 3-PHASE HOMERUN OR MULTIPLE HOMERUN UTILIZING THE SAME CONDUIT, CONNECT TO PANEL INDICATED
- A1 / ES-000 — DETAIL CALL-OUT
- A1 / ES-000 — SECTION/ELEVATION CALL-OUT

A3 ELECTRICAL SITE LEGEND

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REVISIONS

DESCRIPTION	BY	DATE	NUMBER
ISSUED FOR BID	BG	10/3/23	0

Date: 5/25/23
Drawn By: RT
Checked By: BG
Project Mgr: BG
Project No: 23016
Cad File:
Graphic Scale: 0 1"

ELECTRICAL LEGEND AND NOTES

NMCC TRANSFORMER REPLACEMENT
PRESQUE ISLE, MAINE

E-000

ISSUED FOR BID ~ 3 OCTOBER, 2023

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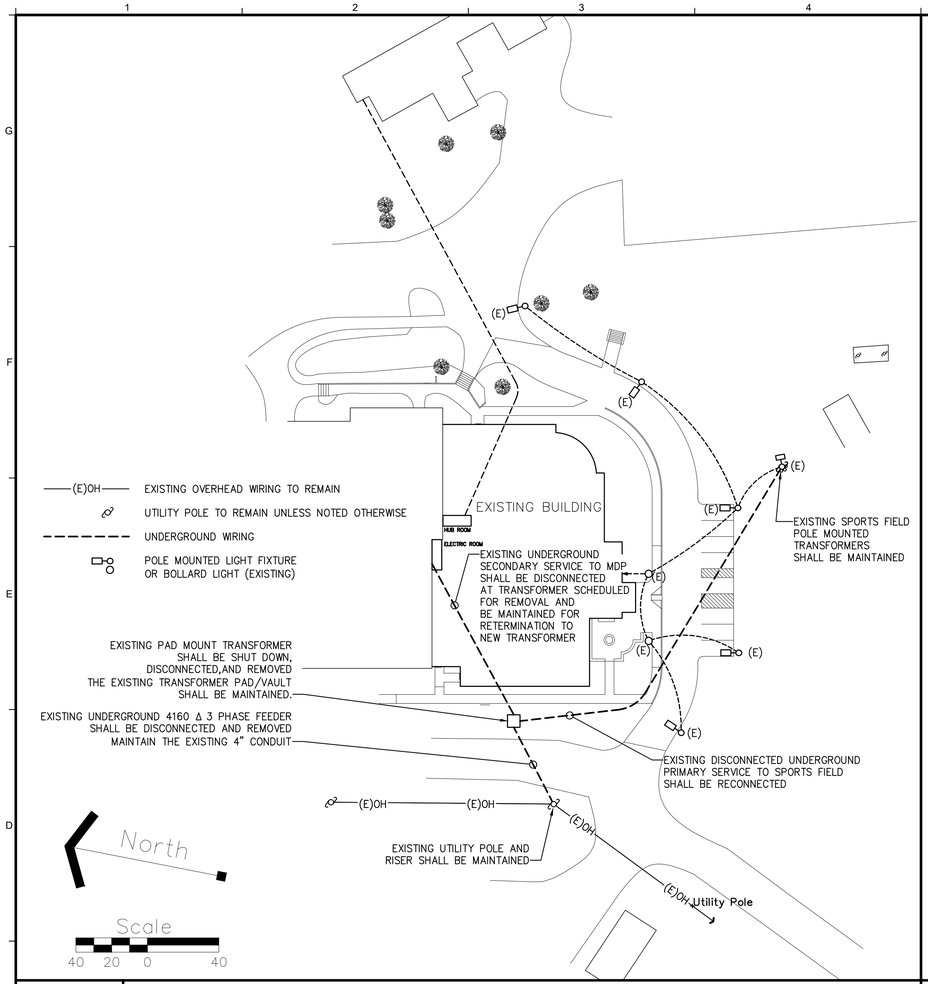
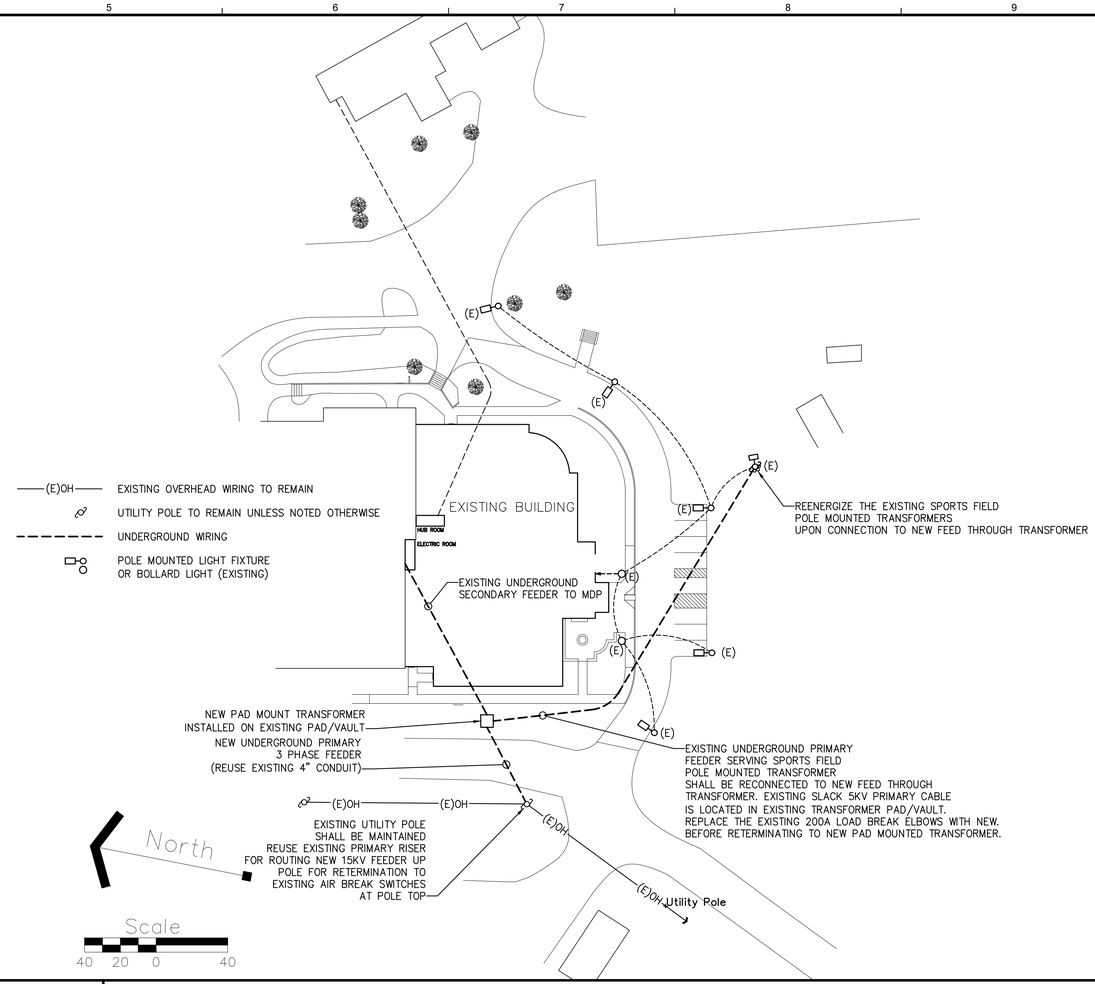


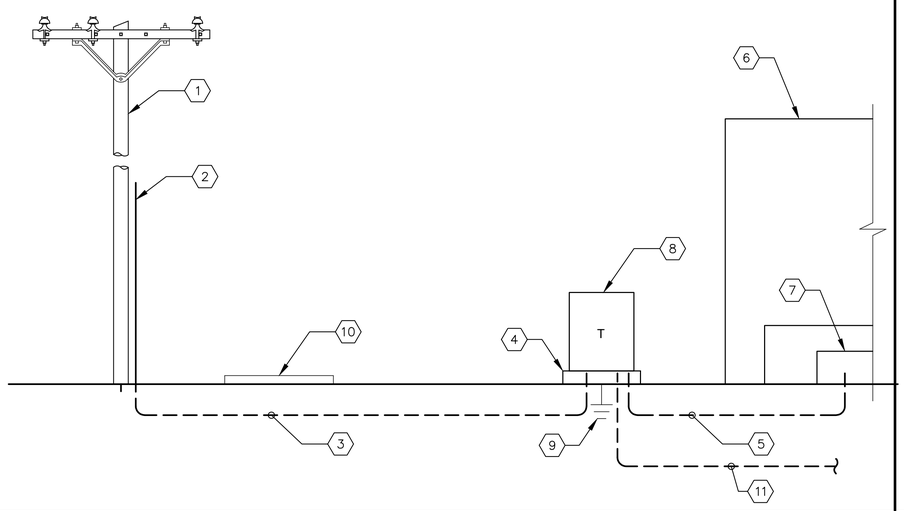
C1 REMOVAL SITE ELECTRICAL PART PLAN

1"=40'



C4 NEW SITE ELECTRICAL PART PLAN

1"=40'



A1 ELECTRICAL ONE LINE DIAGRAM

1. EXISTING UTILITY POLE LOCATED ACROSS THE ROAD FROM THE EXISTING TRANSFORMER SHALL BE MAINTAINED.
2. EXISTING 4" GALVANIZED CONDUIT POLE RISER SHALL BE MAINTAINED.
3. OPEN THE MAIN CIRCUIT BREAKER IN THE EXISTING SWITCHBOARD IN THE EDMUNDS BUILDING SERVED BE THE TRANSFORMER SCHEDULE TO BE REPLACED. OPEN THE MAIN BREAKER IN THE BALL FIELD MAIN SWITCHBOARD. DE-ENERGIZE THE PRIMARY SERVING THE EXISTING TRANSFORMER, DISCONNECT AND REMOVE THE EXISTING 5 KV RATED PRIMARY CONDUCTORS FROM THE FUSED CUT-OUTS AT TOP OF THE UTILITY POLE AND FROM THE PRIMARY SIDE OF THE EXISTING PAD MOUNTED TRANSFORMER AT THE LOAD BREAK ELBOWS. MAINTAIN THE EXISTING 4" GALVANIZED CONDUIT POLE RISER AND THE 4" UNDERGROUND PVC CONDUIT RUNNING FROM THE POLE, UNDER THE ROADWAY AND TO THE EXISTING TRANSFORMER PAD BASE. REMOVE THE EXISTING DISCONNECTED 5 KV RATED PRIMARY FEEDER FROM THE EXISTING POLE RISER AND CONDUIT. REMOVE THE EXISTING PAD MOUNTED TRANSFORMER SCHEDULED FOR REMOVAL AND TURN OVER TO OWNER (MOVE THE UNIT TO A LOCATION ON CAMPUS IDENTIFIED BY THE OWNER). ONCE THE REPLACEMENT TRANSFORMER IS SET THEN PROVIDE NEW PRIMARY FEEDER ; EPR, 15 KV, MV-105, 133%, 1/0, CU. TERMINATE THE 15 KV RATED PRIMARY FEEDER AT THE NEW TRANSFORMER PRIMARY UTILIZING THE NEW 200AMP LOAD BREAK ELBOW CONNECTORS (PROVIDED WITH LIGHTNING ARRESTORS- CONNECTED TO THE TRANSFORMER GROUNDING SYSTEM) AND RE-TERMINATE TO THE EXISTING POLE TOP FUSED CUT-OUTS. UTILIZE THE 4.16 KV PRIMARY VOLTAGE SELECTION IN THE DUAL WOUND PRIMARY TRANSFORMER.
(CHANGE OVER TO A 12.47 KV SYSTEM WILL BE PLANNED FOR IN THE FUTURE)
4. ONCE THE EXISTING TRANSFORMER HAS BEEN DISCONNECTED AND REMOVED, CLEAN AND MAKE MINOR REPAIRS TO THE PAD IN ORDER TO PREPARE THE PAD FOR REUSE WITH THE REPLACEMENT TRANSFORMER. FURNISH AND INSTALL NEW STEEL PLATES OVER THE EXISTING CONDUIT WINDOW AS REQUIRED TO ALIGN WITH THE FOOTPRINT AND CABLE OF THE REPLACEMENT TRANSFORMER. MAINTAIN THE EXISTING PROTECTIVE BOLLARDS TO THE EXTENT POSSIBLE; REPAIR THE BOLLARD CONCRETE CAPS AS NECESSARY TO HELP MINIMIZE WATER INGRESSION. SAND, PRIME AND REPAINT THE BOLLARDS; UTILIZE A COLOR APPROVED BY THE OWNER.
5. EXISTING UNDERGROUND SECONDARY FEEDER FROM EXISTING PAD MOUNTED TRANSFORMER TO EXISTING PANEL MDP INSIDE EDMUNDS CENTER MAIN ELECTRICAL ROOM; 4# 500 KCMIL IN A 4" CONDUIT. DISCONNECT THE EXISTING SECONDARY FEEDER AT THE SECONDARY SPADES OF EXISTING TRANSFORMER SCHEDULED FOR REMOVAL; CLEAN UP THE CABLE ENDS AND PROTECT THE TERMINATION POINTS FOR REUSE IN RE-TERMINATING TO THE REPLACEMENT TRANSFORMER. ONCE THE REPLACEMENT TRANSFORMER IS SET ON THE EXISTING PAD THEN RE-ROUTE THE EXISTING SECONDARY FEEDER FROM THE EXISTING VAULT BELOW INTO THE CONDUIT WINDOW OF THE NEW TRANSFORMER AND RE-TERMINATE TO THE NEW SECONDARY SPADES LUGS.
6. REPRESENTATIVE BOUNDARY OF THE EXISTING EDMUNDS CENTER BUILDING.
7. REPRESENTATIVE BOUNDARY OF THE EXISTING MDP WITHIN THE EXISTING MAIN ELECTRICAL ROOM.
8. PROVIDE NEW 300 KVA PAD MOUNTED TRANSFORMER (FEED THROUGH TYPE); DUAL WOUND PRIMARY RATED FOR (12.47 KV AND 4.16 KV) - THREE PHASE - THREE WIRE (DELTA), SECONDARY SIDE SHALL BE RATED FOR (277/480 VOLT) - THREE PHASE- FOUR WIRE (WYE).
9. PROVIDE NEW GROUNDING SYSTEM FOR NEW TRANSFORMER; PROVIDE NEW BURIED #4/0 BARE COPPER GROUND RING AROUND PERIMETER OF TRANSFORMER AND CONNECTED (USING EXOTHERMIC WELD) TO TWO GROUND RODS. EXTEND TWO #4 BARE COPPER GROUND WIRES INTO TRANSFORMER VAULT (FROM OPPOSITE CORNERS OF GROUND RING). REFER TO DETAIL (A5) ON SHEET ES-500.
10. INDICATES THE EXISTING ROADWAY PASSING BETWEEN THE EXISTING POLE AND THE EXISTING TRANSFORMER/ TRANSFORMER PAD . THE EXISTING PRIMARY CONDUIT RUNNING UNDER THE ROADWAY SHALL REMAIN BE REUTILIZE FOR NEW 15 KV FEEDER.
11. ONCE THE REPLACEMENT TRANSFORMER IS SET THEN RE-TERMINATE THE EXISTING 5 KV RATED PRIMARY FEEDER (SERVING THE BALL FIELD; COILED UP BELOW IN THE EXISTING TRANSFORMER VAULT) AT THE NEW TRANSFORMER PRIMARY UTILIZING THE NEW 200AMP LOAD BREAK ELBOW CONNECTORS INSTALLED UNDER THIS PROJECT (PROVIDED WITH LIGHTNING ARRESTORS- CONNECTED TO THE TRANSFORMER GROUNDING SYSTEM). WHEN THE PROJECT INSTALLATION IS COMPLETE THE REPLACEMENT FEED THROUGH, DUAL WOUND PRIMARY TRANSFORMER SHALL BE RE-TERMINATED TO ITS SOURCE ON THE EXISTING POLE, ITS DOWNSTREAM PRIMARY FEEDER (BALL FIELD LOAD) AND ITS SECONDARY FEEDER (EDMUNDS BUILDING LOAD). TEST THE INSTALLATION PER THE SPECIFICATIONS; ONCE FOUND ACCEPTABLE, SCHEDULE RE-ENERGIZATION OF THE TRANSFORMER AT THE POLE TOP CUTS OUTS, CLOSE THE MAIN BREAKER IN THE EDMUNDS MAIN SWITCHBOARD AND CLOSE THE MAIN BREAKER AT THE BALL FIELD SWITCHBOARD.

A4 ELECTRICAL KEY NOTES

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REVISIONS

NUMBER	DATE	BY	DESCRIPTION
0	10/3/23	BG	ISSUED FOR BID

Date: 5/25/23
Drawn By: RT
Checked By: BG
Project Mgr: BG
Project No: 23016
Cad File:
Graphic Scale: 0 1"

ELECTRICAL SITE PLAN AND ONE LINE DIAGRAM

NMCC TRANSFORMER REPLACEMENT
PRESQUE ISLE, MAINE

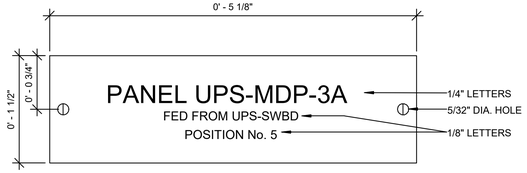
ES-100

ISSUED FOR BID ~ 3 OCTOBER, 2023

N:\Projects\2023\23016 - NMCC Transformer Replacement\4a DRAWINGS - Revit Version - \23016-ES1.dwg Oct 03, 2023 - 1:45pm

D1 | EXISTING UTILITY POLE

D3 | EXISTING PAD MOUNT TRANSFORMER

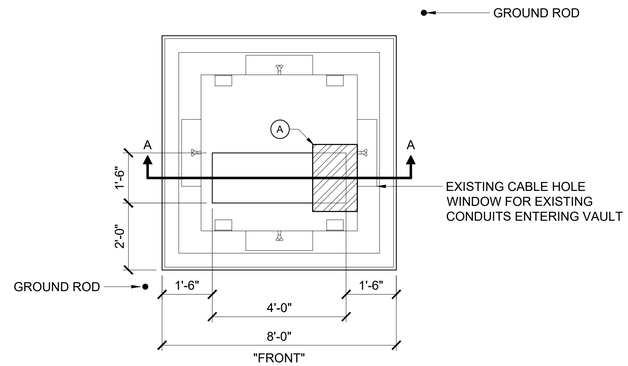


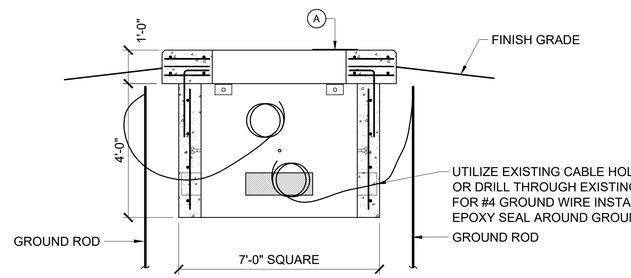
NOTES:

1. NAMEPLATE TO BE 1/16" THICK WHITE PLASTIC WITH BLACK CENTER LAMINATION. FACE SHALL BE WHITE, ENGRAVED LETTERS SHALL BE BLACK.

2. SECURE NAMEPLATE TO SURFACES WITH (2) FLAT HEAD BRASS SCREWS. ADHESIVE CEMENT SHALL NOT BE ALLOWED.

E5 | TYPICAL EQUIPMENT LABEL DETAIL





SECTION A-A

(A) 16"x24"x1/4" GALVANIZED STEEL PLATE.
MID#6000621790

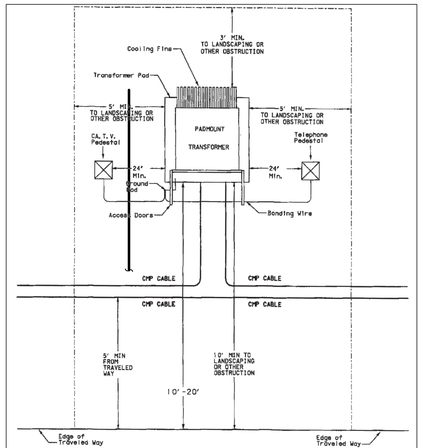
1. "FRONT" DENOTES THE SIDE ON WHICH THE ACCESS DOORS ARE LOCATED. THE CONCRETE BASE SHALL BE SET ON A SUITABLE GRAVEL BASE AND LOCATED SO THAT THE "FRONT" IS ACCESSIBLE BY TRUCK AND SUITABLY PROTECTED FROM PLOW AND TRAFFIC DAMAGE.

2. GRADE SHALL BE FINISHED IN SUCH A MANNER TO ALLOW SURFACE WATER TO FLOW AWAY FROM THE PAD.

3. A 3/4" x 10' GALVANIZED GROUND ROD SHALL BE INSTALLED 6" IN FRONT OF THE LEFT "FRONT" CORNER AND REAR OF THE RIGHT "BACK" CORNER OF THE FOUNDATION. THE TOP OF THE GROUND ROD SHALL BE 6" BELOW FINISH GRADE.

4. A BARE #4 STRANDED COPPER GROUND WIRE SHALL BE INSTALLED FROM THE GROUND ROD THROUGH TWO NEW CABLE HOLES AT THE BOTTOM OF THE PAD. PROVIDE 20' OF GROUND WIRE IN EXISTING CABLE VAULT.

NOTE:
ALL DIMENSIONS SHOWN ARE APPROXIMATE CONFIRM THE ACTUAL DIMENSIONS IN THE FIELD FOR EXISTING (RE-USED) TRANSFORMER PAD VAULT.



Preferred layout of a padmount transformer and direct buried underground distribution system. Prior CMP approval is required for any deviation from this layout.

At each transformer location a level 10 foot by 10 foot (minimum) area will be provided. The elevation of this area shall be sufficiently high to always be above the highest expected water level and at or above the top of any nearby ditch slope. The transformer foundation shall be installed so the top of the foundation is 6 inches above this elevation. The transformer foundation shall be installed no more than 20 feet from a road surface.

A3 | TRANSFORMER CLEARANCE
DO NOT SCALE

A5 | THREE PHASE TRANSFORMER PAD - EXISTING 8' x 8'

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Structural Mechanical Electrical Commissioning

STATE OF MAINE
BRIAN T. GARDNER
No. 15506
REGISTERED
PROFESSIONAL ENGINEER

REVISIONS

NUMBER	DATE	BY	DESCRIPTION
0	10/3/23	BG	ISSUED FOR BID

Date: 5/25/23
Drawn By: RT
Checked By: BG
Project Mgr: BG
Project No: 23016
Cad File:
Graphic Scale: 0 1"

ELECTRICAL DETAILS

NMCC TRANSFORMER REPLACEMENT
PRESQUE ISLE, MAINE

ES-500

ISSUED FOR BID ~ 3 OCTOBER, 2023